GLYCOLYSIS

Each step of the glycolytic pathway requires the use of a specific _____. This process occurs in the _____ of the cell and does not require _____. Thus, it is part of _____ respiration.

1. The first step of glycolysis is "energy-requiring". This energy is made available when an _____ molecule donates a _____ group to glucose (G6P) in a _____ reaction. The major products of this reaction are _____ (F6P) and _____.

2. The _____ is converted to _____(F6P).

3. A second _____ is used to transfer a _____ group to the sugar. Now, the molecule _____ (F1,6-BP) has been formed.

4,5. The backbone splits apart to form two 3-carbon molecules of _____ (G3P). One comes a temporary DHAP molecule.

6. Each molecule of _____ (called an electron or energy carrier) reacts with a molecule of _____. In this reaction, _____ and _____ are gained by NAD+ converting it to NADH (thus 2 NADH are formed). Since NAD+ ***gained*** electrons (and hydrogen), it has been _____.

   Since G3P ***lost*** electrons (and hydrogen), it has been _____. As well, each G3P gains a _____ group (inorganic phosphate) which was floating around in the cytoplasm.

   This produces two molecules of _____ (BPG).

7. Each molecule of BPG donates a phosphate group to an _____ molecule producing two molecules of _____. Such a transfer from a glycolysis intermediate to ADP is called "substrate-level _____". This step of glycolysis is "energy-releasing" since ATP was made. This leaves two molecules of _____ (3PG).

8. Each 3PG is converted into _____ (2PG).

9. Each 2-PGA releases a water molecule leaving two molecules of _____ (or PEP).

10. Each PEP performs "substrate-level phosphorylation" by donating a _____ group to an _____ producing two more _____. This leaves two 3-carbon molecules of _____.

Net Products of Glycolysis:

_____ ATP _____ NADH _____ pyruvate